

Claims

What is claimed is:

1. An apparatus, comprising:

a light module, comprising:

a first light emitting diode ("LED"); and

a second LED connected to the first LED in parallel and with the same polarity.

2. An apparatus as claimed in claim 1, wherein at least one of the first LED and the second LED has a maximum total current rating sufficient to carry all current conducted through the light module.

3. An apparatus as claimed in claim 2, wherein the first and second LEDs have dissimilar electrical characteristics, such that the first LED carries all of the current conducted through the light module while the second LED remains unused unless and until the first LED fails open.

4. An apparatus as claimed in claim 2, wherein the first and second LEDs have similar electrical characteristics.

5. An apparatus as claimed in claim 4, wherein the first and second LEDs have substantially the same forward voltage drop over the operating range of the light module.

6. An apparatus as claimed in claim 5, further comprising a heat sink thermally connected to both the first and second LEDs.

7. An apparatus as claimed in claim 2, further comprising a light-diffuser covering the first and second LEDs.

8. An apparatus as claimed in claim 2, wherein the module further comprising:

a third LED connected to the first and second LEDs in parallel but with opposite polarity;
and

a fourth LED connected to the first and second LEDs in parallel but with opposite polarity.

9. An apparatus as claimed in claim 2, further comprising a plurality of additional light modules as claimed in claim 2, connected together in series and connected to the light module in series.

10. An apparatus as claimed in claim 9, wherein the number of light modules that are connected together in series is selected such that the sum of the minimum operating voltage for each of the light modules is less than or equal to the voltage available to supply the apparatus.

11. An apparatus as claimed in claim 10, wherein the minimum operating voltage of a light module is the greater of the minimum operating voltage of the first LED and the minimum operating voltage of the second LED.

12. An apparatus as claimed in claim 10, wherein the number of light modules that are connected together in series is selected such that the sum of the maximum operating voltage for each of the light modules is greater than or equal to the voltage available to supply the apparatus.

13. An apparatus as claimed in claim 12, wherein the maximum operating voltage of a light module is the lesser of the maximum operating voltage of the first LED and the maximum operating voltage of the second LED.

14. An apparatus as claimed in claim 12, further comprising means for limiting the current flowing through the light module.

15. An apparatus as claimed in claim 14, wherein the means for limiting current comprises a resistor connected in series with the light module.

16. An apparatus, comprising:

a light module, comprising:

a first polarized photon-emitting semiconductor device ("PPESD"); and

a second PPESD connected to the first PPESD in parallel and with the same polarity.

17. An apparatus as claimed in claim 16, wherein at least one of the first PPESD and the second PPESD has a maximum total current rating sufficient to carry all current conducted through the light module.

18. An apparatus as claimed in claim 17, wherein the first and second PPESDs have dissimilar electrical characteristics, such that the first PPESD carries all of the current conducted through the light module while the second PPESD remains unused unless and until the first PPESD fails open.

19. An apparatus as claimed in claim 17, wherein the first and second PPESDs have substantially the same forward voltage drop over the operating range of the light module.

20. A method, comprising connecting a first light emitting diode ("LED") and a second LED together in parallel and with the same polarity.